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Online Advertising: The Impact of Browsing Behavior on Brand Recall

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Online Advertising: The Impact of Browsing Behavior on Brand Recall

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ABSTRACT

Online Advertising: The Impact of Browsing Behavior on Brand Recall

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The average American spends more than twenty hours online each week (EMarketer, 2013, pp. 8). Time online is spent working, browsing social networks, watching videos and consuming news. With so much of consumers' attention focused on the Internet, advertisers have worked to leverage persuasive tactics within their online display advertising. For example, designers and agencies employed animated ads, gamification, and intrusion as methods to garner attention. Even still, a consumer's ability to ignore ad space, also known as "banner blindness," is widespread and well documented (Adotas, 2009, pp. 7-11). This research will consider not only what is on the screen but also what is going on in the head of the consumer to analyze the ways in which online browsing behavior, specifically leisurely information seeking, impacts recall and recognition of web advertisements.

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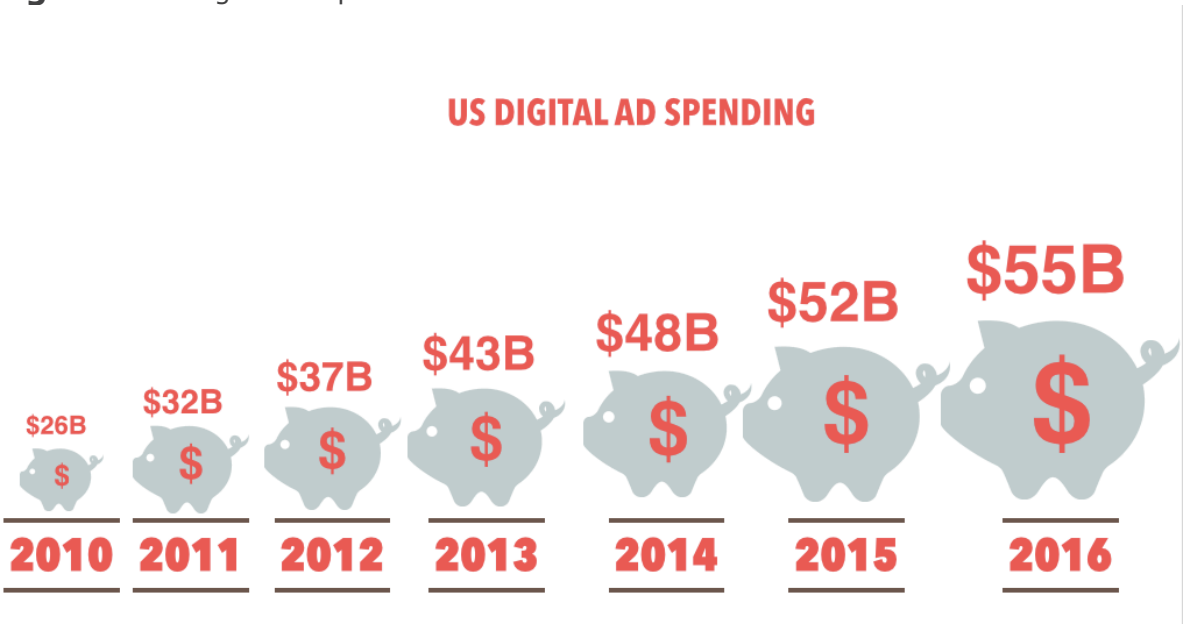
CHAPTER 1: INTRODUCTION

Online advertising started out as a very limited experiment in the 1980's (Gibson, 2012, pp. 1). Over the past twenty years it has risen to become the fastest growing advertising media, increasing 32% in 2013 and, according to eMarketer, advertisers are expected to spend more than twenty billion dollars in 2014 (EMarketer, 2012, pp. 1).

There are five major players in the online advertising race, Google, AOL, Microsoft, Yahoo! and Facebook. These organizations have experimented with several ad pricing models and currently account for more than half of the revenue generated by all online ads (Gibson, 2012, pp. 8-10). As these major players continue to battle for market share, smart marketers are jumping on the display ad bandwagon to get their share of the benefits these ads offer and make the most of their spend.

Figure 1.1 Digital ad spend 2010-2016 in billions:

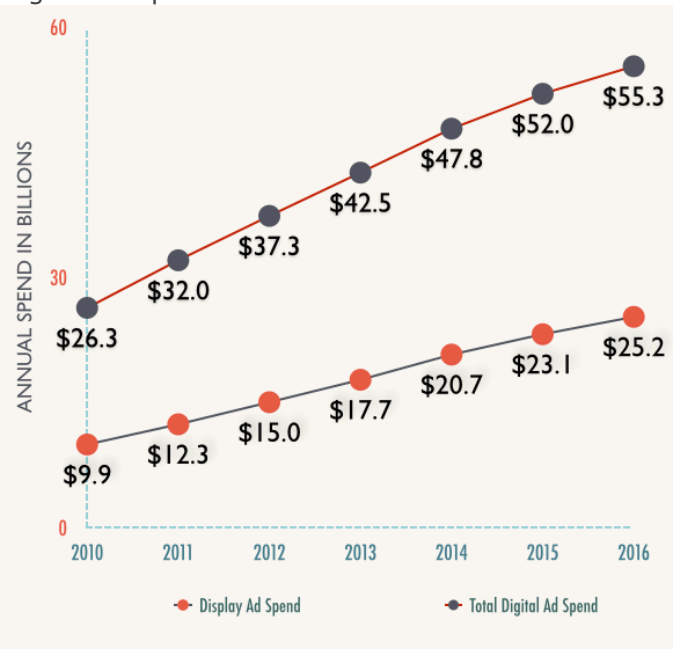


Note: Adapted from Gibson, M. (2012, July 12). History of Online Display Advertising.

According to Forbes, the most measurable form of online advertising are search ads—ads linked with results from search queries—which can translate directly into clicks and purchases by placing a product before customers at the exact moment they are making a purchase decision. On the other hand, display ads—such as banner ads on websites—are much more visible but are less likely to translate into direct clicks (Blanding, 2013, pp. 7). By raising brand awareness, however, display ads may contribute to a consumer's eventual decision to click on a search ad (Blanding, 2013, pp. 7). To this end, almost half of all digital ad dollars were spent on paid search and 38% were used for display ads (ZenithOptimedia, 2012, p. 6).

Figure 1.2

Digital ad spend in billions:



Note: Adapted from Gibson, M. (2012, July 12). History of Online Display Advertising.

Figure 1.3

Percent share of digital ad spending by format:

US Digital Ad Spending Share, by Format, 2010-2016

% of total and billions

	2010	2011	2012	2013	2014	2015	2016
Search	**45.7%**	**47.2%**	**47.1%**	**46.5%**	**45.5%**	**44.9%**	**44.2%**
Display	**37.7%**	**38.5%**	**40.2%**	**41.6%**	**43.3%**	**44.5%**	**45.6%**
—Banner ads	23.7%	23.6%	23.3%	22.6%	21.5%	20.9%	20.4%
—Video	5.4%	6.3%	7.9%	9.7%	12.0%	13.4%	14.5%
—Rich media	5.8%	5.2%	4.9%	4.8%	5.0%	5.2%	5.5%
—Sponsorships	2.7%	3.5%	4.2%	4.5%	4.8%	5.0%	5.2%
Classifieds and directories	**9.9%**	**8.1%**	**7.0%**	**6.4%**	**5.9%**	**5.5%**	**5.3%**
Lead generation	**5.1%**	**4.8%**	**4.6%**	**4.5%**	**4.4%**	**4.2%**	**4.0%**
Mobile messaging	**1.0%**	**0.8%**	**0.6%**	**0.5%**	**0.5%**	**0.4%**	**0.4%**
Email	**0.7%**	**0.7%**	**0.6%**	**0.5%**	**0.5%**	**0.5%**	**0.4%**
Total	**$26.29**	**$31.99**	**$37.31**	**$42.50**	**$47.77**	**$51.95**	**$55.25**

Note: includes advertising that appears on desktop and laptop computers as well as mobile phones and tablets on all formats mentioned; data through 2011 is derived from IAB/PwC data
Source: eMarketer, Sep 2012

144428 www.eMarketer.com

Note: Retrieved from Gibson, M. (2012, July 12). History of Online Display Advertising.

It's clear that marketers see value in display ads even without the direct correlation to clicks and purchases. Many marketers believe that display ads have a large influence on consumers while they're at the top of

the conversion funnel and later translate into search ads clicks when the consumer nears their purchasing decision. That said, current online advertising measurement focuses on the last click. Meaning, the last click gets all the credit for the purchase without taking into consideration of previous display ad exposure.

A consumer could see a television ad for Pepsi tonight; then, on their way to work pass a billboard for Pepsi. Now it's lunchtime and they walk into a convenience store to grab a drink and they choose Pepsi because it's been on their mind. At the point of purchase, the consumer uses a $.50 off coupon. If Pepsi only looked at the last interaction the consumer had with their advertising, the one that most immediately preceded the purchase, they would be missing the majority of the affect their advertising had on the consumer.

If display ads can't be measured by clicks alone, but can still have a large impact on brand awareness and eventual purchasing decisions, it's crucial that marketers understand how and when to best reach their audience in order to get their display ads noticed. Is it better to connect with a consumer when they're leisurely browsing the Internet, or will ads seen while seeking information have a stronger impact and more lasting impression?

CHAPTER 2: RESEARCH

Information Processing Theory

According to the standard information-processing model for mental development, the mind's machinery includes attention mechanisms for bringing information in, working-memory for actively manipulating information, and long-term memory for passively holding information so that it can be used or recalled in the future (Myers, 2004, p. 112).

Internal and external stimuli is only stored long enough for unconscious processes to analyze it and determine whether input should be brought into working memory or discarded (Myers, 2004, p. 98). In order to later be recalled, information must then make it from working memory into long-term memory where it remains until it attenuates.

Short-term Memory is the initial stage of processing sensory information. Information remains here for approximately two seconds before moving into working memory or being lost from the system and forgotten (Eastin, 2012, p. 4).

Working Memory is designed to minimize the use of short-term memory by putting things into clusters, chunks, or nodes. Information remains here for approximately ten seconds before moving into long-term memory or being lost from the system and forgotten (Eastin, 2012, p. 4).

Long-term Memory holds the mass of knowledge in the interconnected links of clusters, chunks, or nodes. Information remains here

until it attenuates. When information is recalled, it is brought back from long-term memory into working memory (Eastin, 2012, p. 4).

Modes of Browsing and Searching

Due to the dramatic growth of time spent online, money spent advertising to those online, and the relative modernity of the online medium, many studies have examined how to classify online browsing behavior (Choo, Detlor, and Turnbull, 2000, p.9). According to Choo, et al. (2000, p. 9):

> **Directed browsing** occurs when browsing is systematic, focused, and directed by a specific object or target. Examples include scanning a list for a known item, and verifying information such as dates or other attributes.
>
> **Semidirected browsing** occurs when browsing is predictive or generally purposeful: the target is less definite and browsing is less systematic. An example is entering a single, general term into a database and casually examining the retrieved records.
>
> **Undirected browsing** occurs when there is no real goal and very little focus. Examples include flipping through a magazine and "channel-surfing."

For the purposes of this study, data collected during semidirected browsing and undirected browsing will be examined.

Types of Online Advertising

Although online browsing behavior has been researched (IABEurope, 2010, p. 3-10), analyzed and classified in many different ways, marketers still find themselves debating the best ways to reach their audience on the Internet. There is no shortage of choices when it comes to online display advertising, according to MecLabs the most typical types of online ads are (MecLabs, 2007 pp. 16-18, pp. 21-22):

> **"Static** display ads, which have been around for more than a decade, offer no movement or user interaction. They are simple images hyperlinked to an advertiser's site. They can contain a combination of still images and text.
>
> **Animated** ads inject movement in .GIF or Flash formats. Depending on the design, the entire ad can be animated or just a part of the ad while the other part remains static. Publishers usually limit the file size of an animated ad and the number of times the animation can loop on their sites.
>
> **Interactive** display ads include a long list of tools and games. They offer the user some function while bringing them to the advertiser's site. The ad's design and coding determines the number of clicks needed to direct a user to an advertiser's website or which portion of the ad is hyperlinked.

Video ads play a short video for the user. The video can be programmed to play automatically when a Web page opens, or it can be user-activated. Their functionality varies greatly. Some allow users to rewind, fast-forward and adjust the volume; others offer no controls. One thing almost all these ads do is link to an advertiser's site.

Expanding ads increase in size when scrolled over or clicked. Their expansion varies. They can start as a static image ad and expand into something as complicated as a fully interactive video. Or they can start as an animation and expand into a list of product features."

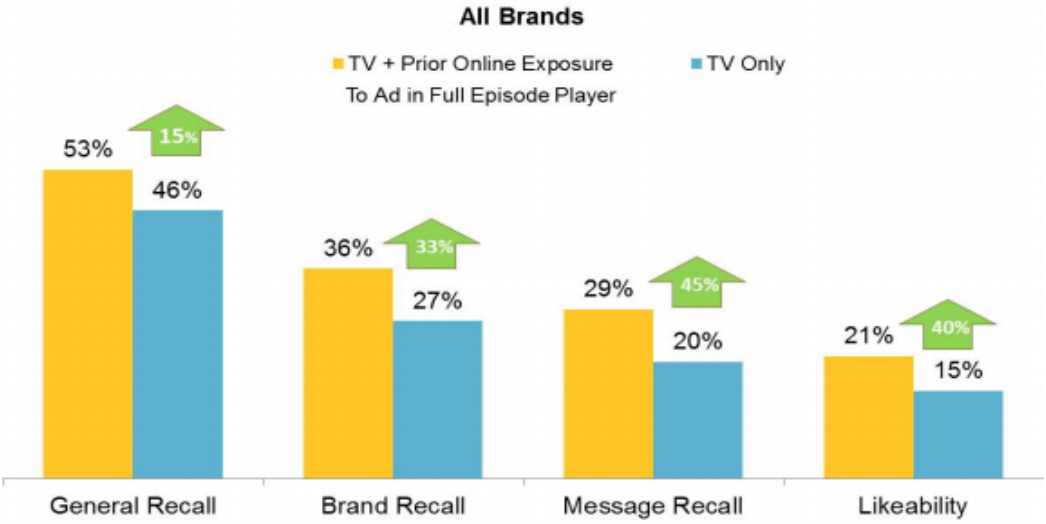
Marketers are focused on designing the next ad type that will increase attention, but there has been little research on what consumer browsing behavior has to do with their willingness or ability to attend to and recall ads.

Brand Recognition

Brand recall is an important factor in online advertising, it's defined as "the ability of consumers to recognize a brand and compare it to other brands" (Cambridge University, n.d., pp. 2). After all, if an ad does manage to catch a consumers' attention but they can't remember what brand or product was advertising, it's not going to be very effective. There have been research studies measuring the impact online display ads have on brand

recall (IABEurope, 2010, p. 3-10). That is, the Interactive Advertising Bureau found that moving television ads to digital video increases a brand's recall by up to a third (See figure 2.2). Looking specifically at recall, Friedman (2013, pp. 3) found that brand recall, message recall, and ad likeability scores for ads run during a full episode online are almost double those of a TV commercial.

Figure 2.2 Online exposure's impact on recall and likeability:



Note: Retrieved from Marvin, G. (2014, January 27). Online Display Ad Spending Up 32 Percent In 2013, Still Just 4.5 Percent Of $243 Billion Market [Nielsen]

Research Question

To this end, the primary goal of this study is to determine whether semidirected browsing would result in greater recall than undirected browsing.

A higher recall would indicate the method of browsing has an impact on how the information is processed and the ability of that information to make it from working memory into long-term memory where it can later be recalled.

RQ1: Does semidirected and undirected browsing differ in their influence ad recall?

CHAPTER 3: QUANTITATIVE ANALYSIS

METHOD

Data was collected by a third party technology company doing their own analysis on usability and brand recall. The data provided for this study included a general breakdown of participants, methodology, and results with no unique identifiers. Participants included 40 adults (23 female) with a mean age of 28 years old. Volunteers participated in the experiment for compensation, a $25 visa gift card provided by the company conducting the research. All were experienced with web browsing on a mac device and had normal or corrected-to-normal vision. Two participants were removed from the analysis for not completing the experiment.

Note: Data were classified under IRB "exempt" status as secondary data existing prior to the project. Data was collected such in a manner that participants could not be identified.

PROCEDURE

The within-group experiment presented participants with two sets of instructions, which they were asked to do for three minutes each. One set of instructions asked participants to casually browse the Internet and was logged as undirected browsing. The other set of instructions asked the participants to find a few interesting facts about oak trees which they would later be asked to present, this session was logged as semidirected browsing.

Participants were randomly assigned into two equal groups; the group who would receive the semidirected browsing instructions first (n = 19), and

the group who would receive the undirected browsing instructions first (n = 19). Each participant was given their second set of instructions immediately following the conclusion of their first task.

The web browser was set to present one of two target online display ads approximately half way through each browsing session. Each ad was shown as a pop-up using java script and html once the participant passed the 1:30 mark and loaded a new page during each prospective browsing session. The ads remained on screen until closed by the participant.

Two visually similar target ads focused on the recognizable packaging with a simple headline were designed for Colegate and Dove (see Figures 3.1 & 3.2). In order to prevent bias on the design of the ads or the order in which the ads were presented, the random order in which the participant received the instructions determined which ad was shown during each browsing session. It was noted what order the participant received the instructions for undirected or semidirected browsing for future recall comparison and analysis.

Figures 3.1

3.1 Colegate display ad presented:

3.2 Dove display ad presented:

After both browsing sessions were completed, participant were asked about the online display ads (or pop-up ads) and if they could recall the brand name of the product presented in one or both of the ads.

"Do you recall the brand names of items in the pop-up ads you were shown during your browsing sessions?"

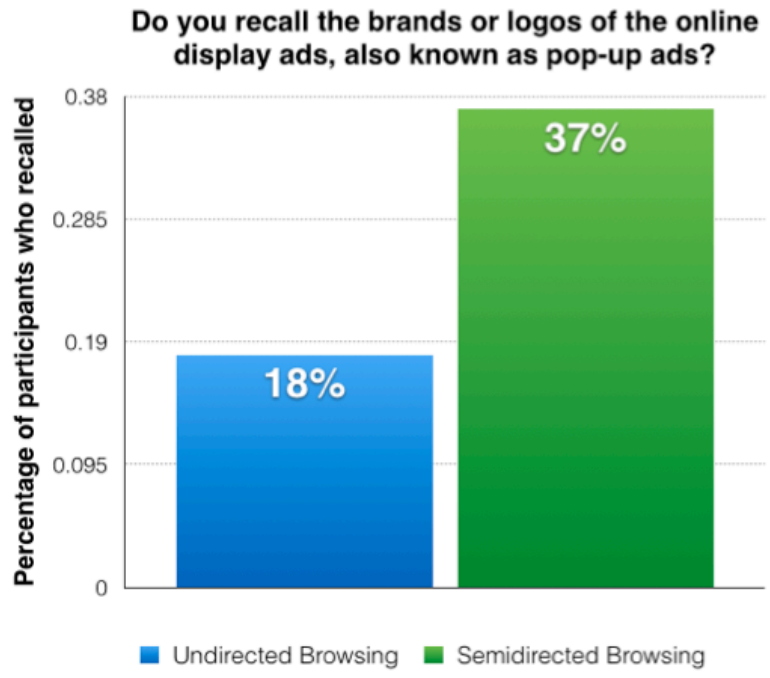
The participants' ability to correctly identify Dove or Colegate was recorded and provided in the data received.

CHAPTER 4: RESULTS

Brand Recall: Participants reported the greatest level of recall during the semidirected browsing sessions. The recall scores of the Dove and Colegate ads were summed and compared against two browsing method groups (undirected and semidirected). Although not significant, the mean for the semi directed was larger at .72 compared to undirected at .37 ($t = 1.835$, $p > .05$). 18% of the 38 participants correctly recalled the brand during undirected browsing, while 37% of the 38 participants correctly recalled the brand during semidirected browsing (see figure 4.1).

Figure 4.1

4.1 Overall brand recall experiment results chart:

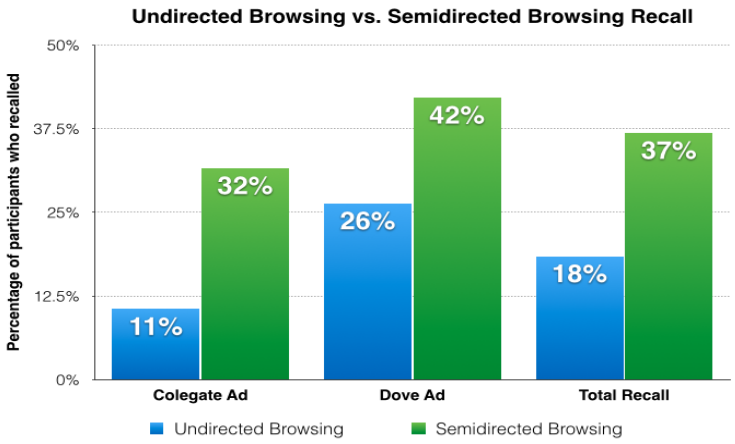


In addition to basic recall, data were examined across all participants and then broken down by ad (see Figure 4.2). The results indicated that semidirected browsing session led to greater level of ad recall no matter what order the browsing took place.

The Dove ad was correctly more often than the Colegate ad during both the directed and undirected browsing sessions, but both ads received better recall when presented during the semidirected browsing session.

Figure 4.2

4.2 Breakdown brand recall experiment results chart by ad:



Error Rates: Two participants were taken out of the analysis because they were not presented with both target ads due to a new page never being visited after the 1:30 mark during one of their browsing sessions, and thus the display ad never loading. They were noted in the data provided as "VOID".

CHAPTER 5: CONCLUSION

In analyzing data that examined brand recall within the context of browsing behavior, this research was able to provide a better understanding of the impact browsing habits have on an advertisements' ability to be effective. Marketers attempting to reach their consumers online at the top of "the funnel" should still consider online display ads a good strategy. However, this study demonstrates that getting in front of consumers alone doesn't maximize an ads' ability to influence recall and buying decisions. It's equally important to present the ad to consumers when they are exhibiting the browsing behaviors that maximize an ads' ability to be brought into working memory and process through to long-term memory where it can later be recalled.

Marketers won't always know what their consumers are thinking and when a person's browsing is directed, semidirected, or undirected; but they can make assumptions based on a variety of factors and pick their display ad placements wisely. The large majority of Facebook users would be considered undirected browsers as they leisurely consume information. Consumers using Google to find information on a topic however, would be more likely to be classified as semidirected browsing as they're likely to be researching or consuming specific information. Data from this research indicate the same display ad placed on each of those sites, receiving an

equal number of impressions would lead to different results. This based on the research findings that a semidirected browser (likely to be the one to see the ad on Google) recalled the ad 37% of the time while an undirected browser (likely to be the one to see the ad on Facebook) recalled the ad 18% of the time.

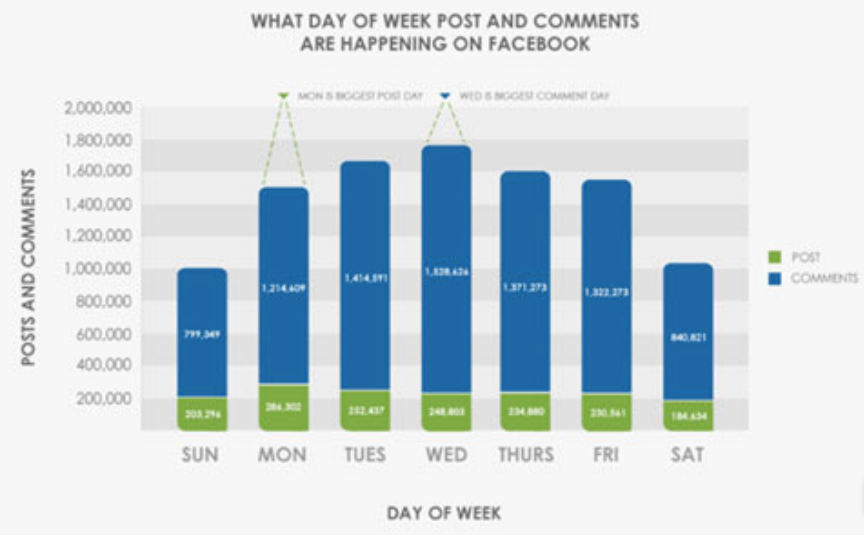
Aside from where to have their ads placed, marketers should also consider time of day as an indicator of what type of browsing their target audiences might be participating in. A Vitrue (2010) study analyzed Facebook posts over the course of three years, taking over 9 million data points into consideration and found when Facebook users are most and least active, indicating when consumers are likely to be undirected browsing. Here, the three biggest usage spikes tend to occur on weekdays at 11:00 a.m., 3:00 p.m., and 8:00 p.m. ET (See Figure 5.1). Additionally, the middle of the week tends to be the most popular days on Facebook and the top of the hour (:0 to :15 minutes) tends to see more interaction than other parts of the hour (See Figures 5.2 & 5.3) (Warren, 2010, pp. 7-12).

Figures 5.1, 5.2 & 5.3

5.1 Facebook conversations by hour:

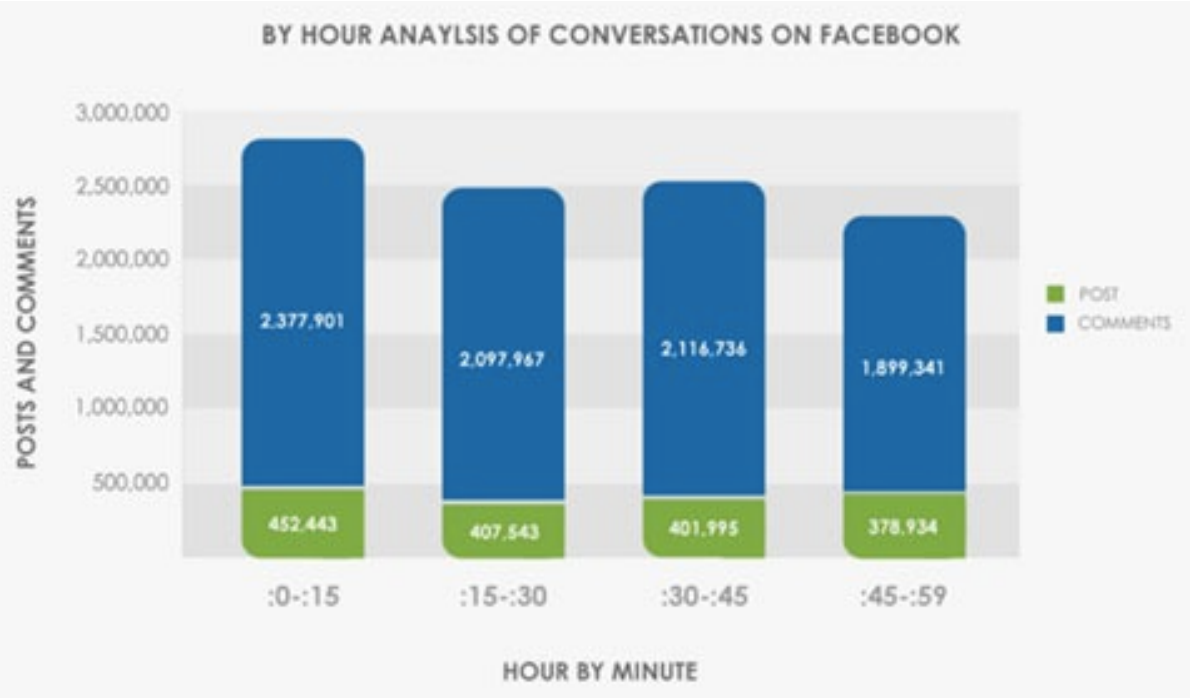
Note: Retreived from Warren, C. (2010, October 28). When Are Facebook Users Most Active? [STUDY].

5.2 Facebook conversations by day:



Note: Retreived from Warren, C. (2010, October 28). When Are Facebook Users Most Active? [STUDY].

5.3 Facebook conversations by quarter hour:



Note: Retreived from Warren, C. (2010, October 28). When Are Facebook Users Most Active? [STUDY].

Understanding what websites are popular when, and what type of browsing behavior is most likely associated with those websites; marketers can arm themselves with additional tools to better capture their audiences' attention and ensure they are getting the most out of each impression online.

LIMITATIONS

There are a few limitations of this study. While data containing 38 participants was enough to approach statistical significance, a larger sample would have given more reliable results. Additionally, recruiting for this study was done through the personal network of company employees, leading to less diversity across participants than is seen in the general population.

The experiment itself also had its limitations. While the experiment was controlled with the same directions given to each participant, participant observation can skew behavior and results. Participants were not told the nature of the research prior to their testing, but attention to detail and online browsing behavior may have been altered based on the knowledge that they were participating in a study of some sort.

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